

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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FEDERAL COMMUNICATIONS COMMISSION

In the Matter of

Replacement of Part 90 by Part 88 to
Revise the Private Land Mobile Radio
Services and Modify the Policies
Governing Them

and

Examination of Exclusivity and
Frequency Assignment Policies of
the Private Land Mobile Radio Services

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PR Docket No. 92-235

REPLY COMMENTS OF THE BOEING COMPANY

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SUMMARY OF POSITION

The majority of the parties filing comments opposed the use of market mechanisms, such as competitive bidding, resale, and user fees, to allocate PLMR spectrum. Although the parties advanced a wide variety of objections, many focused on one flaw in particular, namely, that the market mechanisms proposed by the *Notice* do not account for the fundamental differences between private land mobile and commercial mobile radio services.

Like Boeing, several of the parties observed that a system of auctions would unfairly pit private radio users against entrepreneurs that plan to resell the spectrum to third parties for profit. As the Manufacturers Radio Frequency Advisory Committee explained, "[i]t is unrealistic to expect private radio licensees to be able to bid effectively against those users who generate revenue directly from their spectrum, *i.e.*, carriers." Because there is no substitute for private radio spectrum, however, many PLMR licensees would have no choice but to try and outbid resellers for private radio spectrum. For these licensees, the increased costs resulting from auctions would only serve to reduce their ability to compete in today's competitive global economy.

As for resale, many commenters pointed out that it would be unlikely to promote efficient spectrum use because few, if any, PLMR licensees are interested in becoming regulated commercial radio service providers. Other parties explained that the conversion of private radio spectrum to commercial applications would result in a reduction, rather than an expansion, of the PLMR spectrum available for truly private use. Plainly, such a result would be contrary to the Commission's stated goal of ensuring that there is adequate spectrum to meet the present and future communications needs of PLMR licensees.

The comments also highlighted the illogic of basing a system of user fees for private radio spectrum on the commercial value of the spectrum. As the American Trucking Association explained, "[t]he value of spectrum to someone who will use it for commercial purposes is not the same as its value to someone who is not in the communications business but who uses communications in support of a business" Consistent with the comments, the Commission should not adopt a system of user fees based on the market value of the spectrum being licensed. Instead, the Commission should consider another approach.

Boeing agrees with the American Petroleum Institute that "a properly designed fee structure should motivate users to use spectrum more efficiently with the fee effectively subjugating the licensee at some point in the future to a 'direct economic cost' for inefficient spectrum use." Accordingly, Boeing proposed a system of license fees based on a matrix of efficiency-related factors such as the bandwidth required by the licensee's equipment, the licensee's use of spectrally-efficient equipment, the licensee's use density, and the amount of the licensee's daily use. Unlike the market mechanisms proposed by the *Notice*, license fees would reward efficient spectrum use and impose higher fees on inefficient spectrum users. By doing so, these fees would give all users a direct financial incentive to deploy spectrally efficient equipment and technologies. A system of efficiency-based license fees also would recover for the public a portion of the value of the valuable spectrum resource.

Finally, the Commission should proceed with the consolidation of existing PLMR user groups. The Commission, however, should also establish a central oversight body to ensure that spectrum is fairly allocated and efficiently used.

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REPLY COMMENTS OF THE BOEING COMPANY

The Boeing Company, by its attorneys, hereby replies to the comments that were filed in response to the Commission's Further Notice of Proposed Rule Making ("*Notice*") in the above-captioned proceeding on November 20, 1995.¹

I. THE COMMENTS HIGHLIGHT THE INAPPROPRIATENESS OF USING THE MARKET MECHANISMS PROPOSED BY THE *NOTICE* TO ALLOCATE PLMR SPECTRUM

In its initial comments and an earlier ex parte presentation to the Commission, Boeing explained that the market mechanisms proposed by the *Notice* do not "address the diverse

¹ See *Replacement of Part 90 by Part 88 to Revise the Private Land Mobile Radio Services and Modify the Policies Governing Them and Examination of Exclusivity and Frequency Assignment Policies of the Private Land Mobile Radio Services*, Report and Order and Further Notice of Proposed Rule Making, PR Docket No. 92-235, FCC 95-255 (released June 23, 1995) [hereinafter "*Notice*"].

communications requirements of the wide array of large and small wireless users."² More specifically, Boeing pointed out that the *Notice's* proposed market mechanisms do not account for the fundamental differences between private land mobile and commercial mobile radio services. As a consequence, they are unlikely to give private radio licensees a strong incentive to use spectrum more efficiently. As demonstrated below, many of the parties responding to the *Notice* agree with Boeing.

A. Competitive Bidding

The overwhelming majority of parties filing comments strongly opposed the use of competitive bidding to allocate private land mobile radio ("PLMR") spectrum.³ Although the

² *Id.* at ¶ 3; see Comments of Boeing Company at 3-10 (filed Nov. 20, 1995) [hereinafter "Boeing Comments"]; "Frequency Spectrum Issues," Ex Parte Presentation, The Boeing Company, CC Docket No. 92-297, GN Docket Nos. 90-357 & 93-252, PR Docket Nos. 89-52, 92-235, 93-144 & 93-253 (Sep. 25, 1995).

³ See, e.g., Comments of American Association of State Highway and Transportation Officials at 4 (filed Nov. 20, 1995) [hereinafter "AASHTO Comments"]; Comments of Union Pacific Railroad Company and Missouri Pacific Railroad Company at 13 (filed Nov. 20, 1995) [hereinafter "Pacific Railroad Comments"]; Comments of Alarm Industry Communications Council at 4-5 (filed Nov. 20, 1995) [hereinafter "Alarm Industry Comments"]; Comments of American Automobile Association at 5-6 (filed Nov. 20, 1995) [hereinafter "AAA Comments"]; Comments of Forest Industries Telecommunications at 14-15 (filed Nov. 20, 1995) [hereinafter "FIT Comments"]; Comments of Manufacturers Radio Frequency Advisory Committee at 10 (filed Nov. 20, 1995) [hereinafter "MRFAC Comments"]; Comments of American Gas Association at 4 (filed Nov. 20, 1995) [hereinafter "AGA Comments"]; Comments of Land Mobile Communications Council at 16 (filed Nov. 20, 1995) [hereinafter "LMCC Comments"]; Comments of United and Central Telephone Companies at 5 (filed Nov. 20, 1995) [hereinafter "United/Central Comments"]; Comments of International Taxicab and Livery Association at 11-12 (filed Nov. 20, 1995) [hereinafter "ITLA Comments"]; Comments of UTC on Further Notice of Proposed Rulemaking at 22-24 (filed Nov. 20, 1995) [hereinafter "UTC Comments"]; Comments of Ericsson Corporation at 2 (filed Nov. 20, 1995) [hereinafter "Ericsson Comments"]; Comments of American Trucking Association at 12-13 (filed Nov. 20, 1995) [hereinafter "ATA Comments"].

parties advanced a wide variety of objections to the use of competitive bidding, many commenters focused on the unfairness of pitting private radio users -- that use private radio spectrum to satisfy their internal communications needs -- against entrepreneurs -- that plan to resell spectrum to third parties for profit.⁴

The Manufacturers Radio Frequency Advisory Committee ("MRFAC"), for example, explained that "[i]t is unrealistic to expect private radio licensees to be able to bid effectively against those users who generate revenue directly from their spectrum, *i.e.*, carriers."⁵ Likewise, the International Taxicab and Livery Association ("ITLA") observed that "PLMRS users are by and large not in a position to bid effectively against the communications carrier-types who would use the spectrum to generate revenue from paying subscribers."⁶ For this reason, the Alarm Industry Communications Council ("AICC") concluded that "the likely auction winners will be commercial operators (or cellular 'wannabes') that are looking to become spectrum 'slumlords.'"⁷ The American Automobile Association ("AAA") forecast a similar result. It cautioned that auctioning licenses "to the highest bidder only invites large commercial operators and speculators to buy up these spectrum rights, leaving existing users to wither on the vine."⁸

⁴ See Boeing Comments at 3-5.

⁵ MRFAC Comments at 10.

⁶ ITLA Comments at 12.

⁷ Alarm Industry Comments at 5.

⁸ AAA Comments at 5.

In its comments, Boeing expressed these same concerns. Boeing, MRFAC, and the American Petroleum Institute ("API"), however, also pointed out that many private radio licensees have specialized -- and critical -- communications needs that can only be satisfied by private radio spectrum.⁹ Because there is no substitute for private radio spectrum, Boeing explained, these licensees would have no choice but to try and outbid resellers for private radio spectrum. Few, if any, PLMR licensees would be successful. For those licensees able to outbid resellers, the increased costs resulting from auctions would only serve to increase the cost of U.S. goods and services and thereby reduce their ability to compete in today's competitive global economy. Indeed, as the United and Central Telephone Companies observed, "[t]here are many drawbacks to assigning PLMR licenses by competitive bidding, including substantial additional cost to the licensees and possible jeopardization of the availability of these licenses to those businesses that rely on them for their internal operations."¹⁰

A number of parties offered other sound reasons why the Commission should not use competitive bidding to allocate PLMR spectrum. ITLA, Securicor Radiocom, and MRFAC noted that the spectrum in the PLMR bands is too fragmented and congested to be auctioned on

⁹ See Boeing Comments at 4; MRFAC Comments at 9 (explaining that "the internal communications needs of manufacturers are not to be satisfied by other technologies such as SMRs and cellular Commercial carriers offer lowest common denominator-type services. Private radio needs, in contrast, are highly specialized. The commercial carriers' generic approach simply does not meet those needs."); Comments of American Petroleum Institute at 14-15 (filed Nov. 20, 1995) [hereinafter "API Comments"] (stating that "commercial systems do not, and in the foreseeable future will not, meet a majority of the important safety, design, and reliability needs of private users").

¹⁰ United/Central Comments at 5.

anything but a piecemeal basis.¹¹ Other commenters warned that competitive bidding would jeopardize the ability of many PLMR users to obtain the spectrum they need to provide safety services.¹² Still others, like the American Association of State Highway and Transportation Officials, noted that a system of competitive bidding is poorly suited to the budgetary cycles and fiscal realities of governmental entities.¹³

Of the few parties that did not oppose the use of competitive bidding, none claimed or -- more important -- demonstrated that a system of competitive bidding would serve the public interest.¹⁴ To the contrary, these commenters offered, at most, only qualified support for the use of auctions. The American Mobile Telecommunications Association, for example, noted the problems associated with mingling both private radio users and resellers in auctions, and Nippon Telegraph and Telephone suggested that the use of competitive bidding was not viable as proposed.¹⁵ In view of the strong opposition to auctions, the Commission should not use competitive bidding to allocate PLMR spectrum. Indeed, "[u]nder no circumstances should

¹¹ See ITLA Comments at 12; Comments of Securicor Radiocom Limited at 6 (filed Nov. 20, 1995) [hereinafter "Securicor Comments"]; MRFAC Comments at 10.

¹² See Pacific Railroad Comments at 13; Comments of Houston Police Department at 1 (filed Nov. 20, 1995) [hereinafter "Houston Police Comments"].

¹³ See AASHTO Comments at 4.

¹⁴ See Houston Police Comments at 1; Comments of Nippon Telegraph and Telephone Company at 2-3 (filed Nov. 20, 1995) [hereinafter "Nippon Comments"]; Comments of American Mobile Telecommunications Association at 11 (filed Nov. 20, 1995) [hereinafter "AMTA Comments"].

¹⁵ See AMTA Comments at 11-12; Nippon Comments at 3.

the FCC adopt a competitive bidding system that pits users of private internal systems against commercial entities." ¹⁶

B. Exclusivity

In its initial comments, Boeing supported the thrust of the Commission's proposal to provide private radio licensees that convert to narrowband technologies with the option of obtaining exclusive channel assignments in the PLMR bands.¹⁷ Accordingly, it urged the Commission to offer PLMR licensees exclusive zones of use or protected service areas ("PSAs"). Several commenters, including the Land Mobile Communications Council ("LMCC"), the Personal Communications Industry Association ("PCIA"), and the Association of American Railroads ("AAR"), also favored PSAs.¹⁸ These parties, like Boeing, recognized that PSAs would promote the use of more spectrally efficient technologies by minimizing the risk of interference from conventional technologies.

C. Resale

Although Boeing supported the concept of PSAs, it strongly opposed the Commission's proposal to give PLMR licensees the right to resell excess capacity.¹⁹ Like Boeing, AAR noted that resale "would blur the critical distinction between private and

¹⁶ LMCC Comments at 16-17.

¹⁷ *See Notice* at ¶¶ 118, 134.

¹⁸ *See* LMCC Comments at 14; Joint Pool Consolidation Proposal of Personal Communications Industry Association, Inc. at 2 (filed Nov. 20, 1995); Comments of Association of American Railroads at 34 (filed Nov. 20, 1995) [hereinafter "AAR Comments"].

¹⁹ *See* Boeing Comments at 6-9.

commercial [radio] services."²⁰ Similarly, AICC warned that "the resulting profit incentive" created by resale "would draw commercial users to this Part 90 spectrum like vultures, waiting to push internal use systems off the air."²¹ The conversion of private radio spectrum to commercial applications would thus constrict, rather than expand, the amount of spectrum available to private radio users.²² Boeing therefore agrees with LMCC that, rather than pursuing its resale proposal, "[t]he Commission's focus should be on ensuring that there is sufficient spectrum available to accommodate the needs of existing and future private wireless users."²³

As a number of commenters correctly observed, resale would not ensure the availability of adequate PLMR spectrum because it does not provide private radio licensees with a strong incentive to use spectrum efficiently.²⁴ As these parties explained, most PLMR licensees use private radio solely to satisfy internal communications needs related to their production of goods and services; few are involved in communications-related businesses. Accordingly, these licensees have neither the resources nor the inclination to provide regulated

²⁰ AAR Comments at 35. Indeed, as Forest Industries Telecommunications has explained, "rules which would authorize the sale of private land mobile communications services . . . would be antithetical to the very nature and purpose of the private land mobile services." FIT Comments at 8.

²¹ Alarm Industry Comments at 8.

²² See FIT Comments at 8; MRFAC Comments at 9; United/Central Comments at 3-4; Alarm Industry Comments at 8.

²³ LMCC Comments at 18.

²⁴ See AAR Comments at 13; AMTA Comments at 9; ATA Comments at 6-7; AAA Comments at 7; Motorola Comments at 7.

commercial radio services to third parties.²⁵ In other words, "private users generally are not interested in becoming commercial mobile service providers."²⁶ In this regard, AASHTO and ARINC also noted that some PLMR users, such as governmental entities, are subject to legal restraints that would prohibit them from selling spectrum on the open market.²⁷ Plainly, for these users, the right of resale would not provide any incentive to use private radio spectrum more efficiently.

Although several parties offered token support for the Commission's resale proposal, none has denied the detrimental impact that resale would have on the amount of spectrum available for truly private use.²⁸ Nor has any of these parties offered any evidence to suggest that resale would effectively promote the efficient use of spectrum. To the contrary, these commenters offered only cursory statements of support for resale.²⁹ Given the meritorious objections to resale voiced by the majority of commenters, these few tepid endorsements provide no support for the Commission's resale proposal.

²⁵ In the *Notice*, the Commission tentatively concluded that PLMR licensees that resell excess capacity would be regulated as CMRS providers. *See Notice* at ¶ 135.

²⁶ ATA Comments at 6-7.

²⁷ *See* AASHTO Comments at 4; ARINC Comments at 11.

²⁸ *See* Houston Police Comments at 1; Securicor Comments at 5; Nippon Comments at 3; Ericsson Comments at 2-4; Comments of PacifiCorp at 3 (filed Nov. 20, 1995) [hereinafter "PacifiCorp Comments"].

²⁹ *See* Securicor Comments at 4-5 (stating that "by providing . . . licensees the ability to resell some of the excess capacity created by their migration, the Commission may speed the transition of the PLMR bands to advanced technologies"); Nippon Comments at 3 (stating that "the right to resell excess capacity . . . would encourage users to migrate to more efficient technologies").

D. User Fees

Boeing and many other commenters opposed the system of user fees proposed by the *Notice*.³⁰ Although these parties identified a number of problems presented by the Commission's proposed fees,³¹ several focused on one flaw in particular, namely, that the proposed fees are designed to "reflect the market value of the spectrum."³²

As Boeing explained in its comments, the user fees proposed by the *Notice* would not promote efficiency because the fees are predicated on demographic factors "such as bandwidth, area of operation, population coverage and population density."³³ Although these factors are useful indicators of the commercial value of spectrum, population coverage and population density are totally unrelated to the efficiency with which a PLMR licensee uses spectrum. As a consequence, the proposed fees would neither reward more efficient spectrum use nor impose extra costs on inefficient users.

Other commenters, such as UTC, ITLA, MRFAC, Pacificorp, and AICC, raised a somewhat different objection. These parties opposed the Commission's suggestion that user

³⁰ See AASHTO Comments at 3; Alarm Industry Comments at 6-8; AAA Comments at 4; FIT Comments at 11-14; MRFAC Comments at 11-12; AMTA Comments at 10-11; AGA Comments at 4; ITLA Comments at 11; AAR Comments at 37; ATA Comments at 10.

³¹ The Alarm Industry Communications Committee, for example, pointed out that the system of user fees proposed by the Commission would be extremely difficult to administer. See Alarm Industry Comments at 7. Forest Industries Telecommunications warned that the system of user fees proposed by the *Notice* could make it difficult for public safety users to meet their vital communications needs. See FIT Comments at 12.

³² *Notice* at ¶ 138.

³³ *Id.* at ¶ 137.

fees should be "based on the market prices of similarly situated spectrum bands."³⁴ Like Boeing, these commenters emphasized the illogic of basing a system of user fees for private radio spectrum on the commercial value of the spectrum.³⁵ As the American Trucking Association explained, "[t]he value of spectrum to someone who will use it for commercial purposes is not the same as its value to someone who is not in the communications business but who uses communications in support of a business"³⁶ Consistent with these comments, the Commission should not adopt a system of user fees based on the market value of the spectrum being licensed.

Instead, the Commission should consider an alternative approach. In the *Notice*, the Commission identified spectral efficiency as the primary goal of this proceeding.³⁷ With this important goal in mind, Forest Industries Telecommunications called for the Commission

³⁴ *Id.* at ¶ 138.

³⁵ See MRFAC Comments at 11 (stating "[t]he value of [PLMR] spectrum, which does not independently generate revenue and is used internally to support a non-communications business, cannot be determined by the prices paid at auction for commercial spectrum"); United/Central Comments at 6 (explaining that "it would be entirely inappropriate for user fees to track the auction prices for IVDS or Narrowband PCS licenses"); ITLA Comments at 11 (declaring "the Further Notice's suggestion that IVDS and PCS might establish a 'value' for PLMRS spectrum is severely mistaken; the auction price for commercial spectrum is not relevant to the value of spectrum used in a supporting role for non-communications businesses"); UTC Comments at 27 (noting that "basing user fees for private spectrum on the results of commercial spectrum auctions is inappropriate because private users, which are utilizing the spectrum for non-commercial internal use, do not place the same market value on spectrum as commercial carriers"); PacifiCorp Comments at 3 (stating "PacifiCorp does not feel that the narrowband PCS and other auction prices are relevant to setting fees in the private land mobile markets"); Alarm Industry Comments at 7 (stating user "fees should not be based on the value of exclusive commercial spectrum").

³⁶ ATA Comments at 10.

³⁷ See *Notice* at ¶ 110.

to use fees "as 'incentives' to promote spectrum efficiency or early migration to narrowband and other technologies."³⁸ Similarly, the American Petroleum Institute observed that "a properly designed fee structure should motivate users to use spectrum more efficiently with the fee effectively subjugating the licensee at some point in the future to a 'direct economic cost' for inefficient spectrum use."³⁹ In its initial comments, Boeing proposed just such a system of fees.

More specifically, Boeing urged the Commission to adopt an efficiency-based system of license fees that would provide users with a direct financial incentive to design and operate their PLMR systems in a spectrally efficient manner. Such a system should entail a graduated system of fees predicated on a matrix of objectively verifiable factors. Boeing concurs with the American Trucking Association ("ATA") that one such factor should be the use density or number of mobile radios assigned to a channel. Otherwise, as ATA explained, "there would be no reward for spectrum efficiency."⁴⁰ Additional efficiency-related factors could include the bandwidth required by the licensee's equipment, the licensee's use of spectrally-efficient equipment, and the amount of the licensee's daily use.

Unlike the system of user fees and other market mechanisms proposed by the *Notice*, an efficiency-based system of license fees would effectively serve the primary goal of this proceeding -- to promote efficient spectrum use in the PLMR bands. At the same time, it

³⁸ FIT Comments at 12. For its part, Securicor Radiocom urged the Commission to "adopt a schedule of user fees that both recognizes the current state-of-the-art in spectrum efficiency and provides incentives for even further improvements." Securicor Comments at 4.

³⁹ API Comments at 6.

⁴⁰ ATA Comments at 11.

would avoid the pitfalls of the market mechanisms proposed by the *Notice*. By rewarding efficient spectrum use and imposing higher fees on inefficient spectrum users, license fees would give all users a direct financial incentive to deploy spectrally efficient equipment and technologies.⁴¹ In addition, a system of efficiency-based license fees would recover for the public a portion of the value of the valuable spectrum resource.

II. THE COMMISSION SHOULD ADOPT A CONSOLIDATION PLAN THAT IS FOCUSED ON EFFICIENCY

The *Notice* proposed the consolidation of the twenty existing PLMR radio services into two or four user groups.⁴² A number of commenters offered support for this proposal.⁴³ As explained by the *Notice*, consolidation is necessary to distribute assignments between low-use and high-use groups more evenly, simplify inter-service sharing procedures, organize channel allocations so as to enable licensees to use advanced technologies more easily, and organize the PLMR services in such a manner as to achieve more efficient and flexible spectrum use.⁴⁴

Although Boeing supported the thrust of the Commission's consolidation plan, Boeing urged the Commission to modify its proposal. More specifically, Boeing urged the Commission to establish, as the cornerstone of its consolidation plan, a central body to oversee all private radio users not engaged in resale. Under the plan proposed by the *Notice*, there is

⁴¹ Although license fees should be high enough to promote spectrally efficient systems, they should be set low enough so as not to offset the efficiency gains achieved through the use of PLMR spectrum.

⁴² See *Notice* at ¶ 52.

⁴³ See United/Central Comments at 2; Boeing Comments at 12; see also API Comments at 7.

⁴⁴ See *Notice* at ¶ 51.

no mechanism for ensuring that spectrum is used efficiently by, and distributed equitably among, the different user groups. A central oversight body, comprised of representatives of each of the user groups, would satisfy this pressing need.

Boeing also agrees with the Coalition of Industrial and Land Transportation Radio Users that in organizing service pools the Commission should be "guided by one overriding principle: user compatibility."⁴⁵ Specifically, the Commission should be careful not to place resellers in the same service pools as private radio users. Plainly, private radio users and resellers use PLMR spectrum to perform incompatible functions.⁴⁶ The risk of interference from resellers would discourage the deployment of spectrally efficient equipment and technologies by PLMR licensees that use private radio to satisfy their important internal communications needs. This, in turn, would frustrate the important goals identified by the *Notice*.

⁴⁵ Consolidation Proposal of Coalition of Industrial and Land Transportation Radio Users at 3.

⁴⁶ See UTC Comments at 4.

III. CONCLUSION

For all of the reasons set forth above and in its initial comments, Boeing urges the Commission to reject the market-based alternatives proposed by the *Notice*. Instead, the Commission should adopt an efficiency-based system of license fees designed to promote the efficient use of private radio spectrum. Finally, the Commission should proceed with the consolidation of existing PLMR user groups and establish a central oversight body to ensure that spectrum is fairly allocated and efficiently used.

Respectfully submitted,

THE BOEING COMPANY



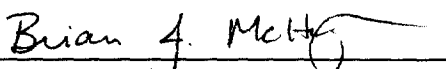
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I, Brian J. McHugh, hereby certify that I have this eleventh day of January, 1996, served a copy of the foregoing Reply Comments of The Boeing Company upon the parties set forth in the attached service list, by first class mail, postage prepaid.



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